



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,668	04/30/2001	Radhika Thekkath	MTEC004/00US (0121.00US)	8993
22903	7590	12/02/2004	EXAMINER	
COOLEY GODWARD LLP ATTN: PATENT GROUP 11951 FREEDOM DRIVE, SUITE 1700 ONE FREEDOM SQUARE- RESTON TOWN CENTER RESTON, VA 20190-5061			PHAM, CHRYSTINE	
			ART UNIT	PAPER NUMBER
			2122	
DATE MAILED: 12/02/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/844,668	THEKKATH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Chrystine Pham	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 April 2001.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 April 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 7/19/02 & 6/13/03.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

**Remarks**

1. This action is responsive to application 09/844668 filed on 30<sup>th</sup> April 2001. Claims 1-22 are presented for examination.

**Specification**

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

**Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

4. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Mann (US 6009270), hereinafter, *Mann*.

**Claim 1**

*Mann teaches a tracing system (e.g., see FIG.1, FIG.2 & associated text), comprising:  
an embedded processor (e.g., see 102 FIG.1, FIG.2 & associated text; col.3:65-67), said embedded processor including,*

- *a processor core for executing instructions (e.g., see PROCESSOR CORE 104 FIG.1 & associated text; col.4:45-50); and*
- *trace generation logic (i.e., tracing method) that is operative to periodically generate trace synchronization information (e.g., see trace synchronization information Abstract), wherein said trace synchronization*

Art Unit: 2122

information is periodically generated in accordance with a synchronization period (e.g., see *TRACECLK FIG.2 & associated text; col.7:1-9*) defined by at least a part of a trace control register (e.g., see *TRACE CONTROL 218 FIG.2 & associated text; see TSYNC REGISTER 703 FIG.7 & associated text*).

### **Claim 2**

The rejection of base claim 1 is incorporated. *Mann further teaches wherein said synchronization period enables multiple instances of said periodically generated trace synchronization information (e.g., see 200 FIG.3 & associated text) to be stored at one time (i.e., sent or outputted to) in a trace memory (i.e., trace memory included in said embedded processor) (e.g., see TRACE CACHE 200 FIG.2 & associated text).*

### **Claim 3**

The rejection of base claim 2 is incorporated. Claim recites limitations, which have been addressed in claim 2, therefore, is rejected for the same reasons as cited in claim 2.

### **Claim 4**

The rejection of base claim 2 is incorporated. *Mann further teaches wherein said embedded processor further includes a trace capture block that receives trace data from said trace generation logic (e.g., see instruction trace capture col.4:37-41; see BRKMODE TABLE 3 col.8:64-66; see BRTC col.6:50-67).*

### **Claim 5**

The rejection of base claim 4 is incorporated. *Mann further teaches wherein said trace capture block sends trace data to an off-chip implementation of said trace memory (e.g., see HOST SYSTEM H FIG.1 & associated text; see 230 FIG.3 & associated text).*

### **Claim 6**

Art Unit: 2122

The rejection of base claim 1 is incorporated. *Mann* further teaches **wherein said synchronization period is defined by a single field** (i.e., containing bit values corresponding to predefined synchronization periods) **in said trace control register** (e.g., see *TSYNC{6:0}*, *TCLK{2:0}* TABLE 2 col.8:5-20).

**Claim 7**

The rejection of base claim 6 is incorporated. Claim recites limitations, which have been addressed in claim 6, therefore, is rejected for the same reasons as cited in claim 6.

**Claim 8**

The rejection of base claim 7 is incorporated. *Mann* further teaches **wherein a first set of said predefined synchronization periods apply to an on-chip implementation of said trace memory** (e.g., see *TRACE CACHE 200* FIG.2 & associated text) **and a second set of said predetermined synchronization periods apply to an off-chip implementation of said trace memory** (e.g., see *200, 230* FIG.3 & associated text).

**Claim 9**

The rejection of base claim 1 is incorporated. *Mann* further teaches **wherein said trace synchronization information includes program counter information** (i.e., application space identity information) (e.g., see *COUNTER 701* FIG.7 & associated text; see *current program address* col.16:25-30).

**Claim 10**

The rejection of base claim 1 is incorporated. *Mann* further teaches **wherein said trace synchronization information includes an operating mode or state** (i.e., debug mode) **of said embedded processor** (e.g., see *STOPTX* col.7:10-17; see symbol *STOP* TABLE 3 col.8:55:60; see *BRTC* col.6:50-67).

**Claim 11**

Art Unit: 2122

The rejection of base claim 1 is incorporated. *Mann* further teaches **wherein said trace synchronization information includes information that identifies (i.e., describes) a current process being executed by said embedded processor (e.g., see TCODE 0110 TABLE 6 col.13:40-45; see trace synchronization entry col.14:50-53).**

### **Claim 12**

The rejection of base claim 1 is incorporated. *Mann* further teaches **wherein said trace synchronization information includes load and store address information (e.g., see loading/reading of data, read/write operations col.5:20-37).**

### **Claims 13-18**

Claims recite limitations, which have been addressed in claims 1, 2, 9-12, therefore, are rejected for the same reasons as cited in claims 1, 2, 9-12.

### **Claim 19**

*Mann* teaches a computer program product comprising

- **computer-readable program code (i.e., computer data signal) for causing a computer to describe an embedded processor (e.g., see FIG.1 & associated text; see claims 10-11 above), said embedded processor including a processor core for executing instructions and trace generation logic that is operative to periodically generate trace synchronization information, wherein said trace synchronization information is periodically generated in accordance with a synchronization period defined by at least a part of a trace control register (see claim 1); and**
- **a computer-readable medium (i.e., transmission medium) configured to store the computer-readable program code (e.g., see FIG.2 & associated text).**

### **Claims 20-21**

Claims recite limitations, which have been addressed in claims 1, 9-10, 19, therefore, are rejected for the same reasons as cited in claims 1, 9-10, 19.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*
6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Mann* in view of *Shagam* (US 6311326), hereinafter, *Shagam*.

**Claim 22**

The rejection of base claim 21 is incorporated. *Mann* does not expressly disclose wherein computer-readable program code is transmitted to said computer over the Internet. However, *Shagam* teaches **wherein computer-readable program code (i.e., trace data) is transmitted to said computer over the Internet** (e.g., see Abstract; see 400, 402 FIG.3 & associated text; col.1:50-67; col.4:54-56). *Shagam* and *Mann* are analogous art because they are both directed to tracing systems/methods. It would have been obvious to one of ordinary skill in the pertinent art at the time the invention was made to incorporate the teaching of *Shagam* into that of *Mann* for the inclusion of transmitting trace data over the Internet. And the motivation for doing so would have been to facilitate remote online access to and sharing of trace data for debugging software installed on client computers situated in remote locations without imposing significant performance degradation on the client computer system (e.g., interrupting or impairing the client's ability to do business).

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Art Unit: 2122

- o Apparatus and method for storing trace information, Edwards (US 6732307)
- o Microcomputer electronic equipment, and debugging system, Miyayama et al. (US 6665821)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chrystine Pham whose telephone number is 571.212.3702. The examiner can normally be reached on Mon-Fri, 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q Dam can be reached on 571.272.3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chrystine Pham  
Examiner  
GAU 2122  
November 27, 2004

WEI Y. ZHEN  
PRIMARY EXAMINER

